

## CLAIMS

## 1. A connector comprising

a housing provided with a fluid passage in its interior and a connection port for engagement with a tube; and

a valve of an elastic material accommodated in said housing; wherein

said valve has a cylindrical base; a valve portion on one axial end of said base which becomes in contact with said tube to be pushed inward by said tube; and a slit formed in said valve portion which opens when said valve portion is pushed inward; and

said valve undergoes elastic deformation when said tube is engaged with said connection port of the housing by pushing said tube against said valve portion of the valve, and said slit opens as a result of said elastic deformation such that said valve portion becomes in close contact with distal end surface and distal peripheral surface of said tube.

## 2. A connector comprising

a housing provided with a fluid passage in its interior and a connection port for engagement with a tube; and

a valve of an elastic material accommodated in said housing; wherein

said valve has a cylindrical base; a valve portion on one axial end of said base which becomes in contact with said tube to be pushed inward by said tube; and a slit formed in said valve portion which opens when said valve portion is pushed inward; and

said valve undergoes elastic deformation when said tube is engaged with said connection port of the housing by pushing said tube against said valve portion of the valve, and said slit opens as a result of said elastic deformation and said base becomes folded such that said valve portion enters the interior of said vase and a new interior surface defined by the folded valve portion becomes in close contact with distal peripheral surface of said tube.

### 3. A connector comprising

a housing provided with a fluid passage in its interior and a connection port for engagement with a tube; and

a valve of an elastic material accommodated in said housing; wherein

said valve has a cylindrical base; a valve portion on one axial end of said base which becomes in contact with said tube to be pushed inward by said tube; and a slit formed in said valve portion which opens when said valve portion is pushed inward; and

said valve undergoes elastic deformation when said tube is engaged with said connection port of the housing by pushing said tube against said valve portion of the valve, and said slit opens as a result of said elastic deformation such that said base becomes compressed in the axial direction to become dilated.

4. A connector comprising

a housing provided with a fluid passage in its interior and a connection port for engagement with a tube; and

a valve of an elastic material accommodated in said housing; wherein

said valve has a cylindrical base; a valve portion on one axial end of said base which becomes in contact with said tube to be pushed inward by said tube; and a slit

formed in said valve portion which opens when said valve portion is pushed inward; and

said valve undergoes elastic deformation when said tube is engaged with said connection port of the housing by pushing said tube against said valve portion of the valve, and said slit opens as a result of said elastic deformation such that said valve portion becomes in close contact with said tube and the area of contact enters the interior of said base.

5. A connector comprising

a housing provided with a fluid passage in its interior and a connection port for engagement with a tube; and

a valve of an elastic material accommodated in said housing; wherein

said valve has a cylindrical base; a valve portion on one axial end of said base which becomes in contact with said tube to be pushed inward by said tube; and a slit formed in said valve portion which opens when said valve portion is pushed inward; and

said valve undergoes elastic deformation when said tube is engaged with said connection port of the housing by pushing said tube against said valve portion of the valve,

and said slit opens as a result of said elastic deformation with the base being dilated; and a space is defined between said base and said housing to allow said dilatation of the base.

6. A connector comprising

a housing provided with a fluid passage in its interior and a connection port for engagement with a tube; and

a valve of an elastic material accommodated in said housing; wherein

said valve has a cylindrical base; a valve portion on one axial end of said base which becomes in contact with said tube to be pushed inward by said tube; a slit formed in said valve portion which opens when said valve portion is pushed inward; and a fixture portion on the other axial end of said base, said fixture portion securing said valve against said housing; and

said housing has a relief space defined in its interior to thereby allow moving of <sup>the</sup> fixture <sup>portion</sup> side of said base into said relief space;

said valve undergoes elastic deformation when said tube is engaged with said connection port of the housing by pushing said tube against said valve portion of the valve,

and said slit opens as a result of said elastic deformation with the fixture side of said base being pushed into said relief space.

7. A connector according to claim 6 wherein said base becomes compressed in the axial direction to become dilated when said tube is pushed against said valve portion of the valve.

*Sub  
a3* 8. A connector according to claim 6 or 7 wherein a space is defined between said base and said housing to allow said dilatation of said base.

9. A connector according to any one of claims 1 to 6 wherein said valve restores its original shape when said tube is disengaged from said connection port.

10. A connector according to any one of claims 1 to 6 wherein said slit has a size such that penetration of said tube through said slit upon opening of said slit is not allowed.

11. A connector according to claim 10 wherein said valve portion has a thick area in the central region, and said slit is formed in said thick area.

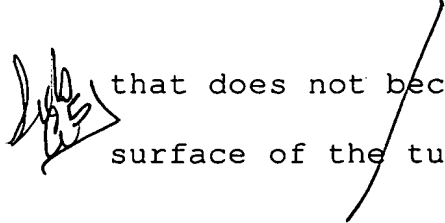
*Sub 14* 12. A connector according to any one of claims 1 to 6 wherein at least a part of said base is tapered such that outer diameter or inner diameter increases with increase in the distance from said valve portion.

13. A connector according to any one of claims 1 to 6 wherein said valve portion has a projection and/or a recess on the surface that becomes in contact with distal end surface of said tube.

14. A connector according to claim 13 wherein said valve portion has a first projection on the surface that becomes in contact with said distal end surface of the tube.

15. A connector according to claim 14 wherein said first projection has a shape resembling a dome.

*Sub 15* 16. A connector according to any one of claims 1 to 15 wherein said valve portion has a projection on the surface

 that does not become in contact with said distal end surface of the tube.

17. A connector according to claim 16 wherein said projection constitutes a part of a sphere.